

American Journal of Physiology: Heart and Circulatory Physiology

No. 1. JULY 1982

Helical fibers in myocardium of dogs change their pitch as they contract <i>G. D. Meier, M. C. Ziskin, and A. A. Bove</i>	H1
Coronary blood flow changes following activation of adrenergic receptors in the conscious dog <i>P. A. Gwartz and H. L. Stone</i>	H13
Functional significance of reduced cardiac sympathetic innervation in the newborn dog <i>H. G. Erath, Jr., R. C. Boerth, and T. P. Graham, Jr.</i>	H20
Cerebral circulatory response to carbon monoxide and hypoxic hypoxia in the lamb <i>R. C. Koehler, M. D. Jones, Jr., and R. J. Traystman</i>	H27
Bicarbonate ion modulation of cerebral blood flow during hypoxia and hypercapnia <i>R. C. Koehler and R. J. Traystman</i>	H33
Structure and function of specific regions in the canine atrioventricular node <i>W. T. Woods, L. Sherf, and T. N. James</i>	H41
Microvascular response to blockade of prostaglandin synthesis in rat skeletal muscle <i>J. E. Faber, P. D. Harris, and I. G. Joshua</i>	H51
Enhanced renal vasoconstriction in rats fed essential fatty acid-deficient diet <i>H. M. Sakr and E. W. Dunham</i>	H61
Voltage and time dependence of restitution in heart <i>S. L. Lipsius, H. A. Fozzard, and W. R. Gibbons</i>	H68
Membrane currents, contractions, and aftercontractions in cardiac Purkinje fibers <i>S. L. Lipsius and W. R. Gibbons</i>	H77
Ultrastructural and enzymatic development of fetal guinea pig heart <i>T. P. Rolph, C. T. Jones, and D. Parry</i>	H87
Effects of α -adrenergic receptor blockade on coronary circulation in conscious dogs <i>P. Macho, T. H. Hintze, and S. F. Vatner</i>	H94
Internal capacitance and resistance allow prediction of right ventricle outflow <i>K. B. Campbell, J. A. Ringo, Y. Wakao, P. A. Klavano, and J. E. Alexander</i>	H99
Circulatory effects of chemical sympathectomy in fetal, neonatal, and adult sheep <i>K. Tabsh, B. Nuwayhid, S. Murad, E. Ushioda, R. Erkkola, C. R. Brinkman III, and N. S. Assali</i>	H113
Vasodilation or altered perfusion pressure moves 15- μ m spheres trapped in the gut wall <i>L. C. Maxwell, A. P. Shepherd, and G. L. Riedel</i>	H123
Utilization of endogenous lipid, glycogen, and protein by rabbit aorta <i>R. Odessey and K. V. Chace</i>	H128

RAPID COMMUNICATIONS

Changes in intracellular Ca^{2+} activity with stimulation in sheep cardiac Purkinje strands <i>M. G. Lado, S.-S. Sheu, and H. A. Fozzard</i>	H133
---	------

No. 2. AUGUST 1982

Sympathetic and vascular dysfunction in early experimental juvenile diabetes mellitus <i>S. M. Mueller, T. M. Mueller, and P. J. Ertel</i>	H139
Relaxant responses to transmural stimulation and nicotine of dog and monkey cerebral arteries <i>N. Toda</i>	H145

A mechanism for reduced myocardial carnitine levels in diabetic animals <i>T. C. Vary and J. R. Neely</i>	H154
Role of mitochondrial oxidative phosphorylation in regulation of coronary blood flow <i>E. M. Nuutinen, K. Nishiki, M. Erecińska, and D. F. Wilson</i>	H159
Pericoronary nerve mediates inhibitory sympathetic response to coronary occlusion <i>S. Suehiro and I. Ninomiya</i>	H170
Selective sympathetic neural changes in hypertrophied right ventricle <i>P. G. Schmid, D. D. Lund, J. A. Davis, C. A. Whiteis, R. K. Bhatnagar, and R. Roskoski, Jr.</i>	H175
Reactive and exercise hyperemia during high levels of adenosine infusion <i>R. L. Hester, A. C. Guyton, and B. J. Barber</i>	H181
Pathophysiological concentrations of lysophosphatides and the slow response <i>P. B. Corr, D. W. Snyder, B. I. Lee, R. W. Gross, C. R. Keim, and B. E. Sobel</i>	H187
Active and passive capillary control in red muscle at rest and in exercise <i>C. R. Honig, C. L. Odoroff, and J. L. Frierson</i>	H196
A mathematical model of primary pacemaking cell in SA node of the heart <i>D. G. Bristow and J. W. Clark</i>	H207
Fade of cardiac responses during tonic vagal stimulation <i>P. Martin, M. N. Levy, and Y. Matsuda</i>	H219
Global cerebral vasodilation by stimulation of rat fastigial cerebellar nucleus <i>M. Nakai, C. Iadecola, and D. J. Reis</i>	H226
Synergistic effects of pressure, distal resistance, and vasoconstriction on stenosis <i>W. P. Santamore, R. L. Kent, R. A. Carey, and A. A. Bove</i>	H236
Development of microvascular rarefaction in the spontaneously hypertensive rat <i>R. L. Prewitt, I. I. H. Chen, and R. Dowell</i>	H243
Coronary dilator actions of adenosine and CO ₂ in experimental diabetes <i>S. E. Downing, J. C. Lee, and E. M. Weinstein</i>	H252
Role of carotid artery resistance to collapse during high-intrathoracic-pressure CPR <i>F. C. P. Yin, J. M. Cohen, J. Tsitlik, B. Zola, and M. L. Weisfeldt</i>	H259
Relationship of mitochondrial alterations and ^{99m} Tc pyrophosphate uptake during myocardial ischemia <i>A. Mukherjee, L. M. Buja, P. Kulkarni, M. Nicar, K. R. Chien, and J. T. Willerson</i>	H268
No effect of intrarenal converting enzyme inhibition on canine renal blood flow <i>B. G. Zimmerman, P. C. Wong, G. K. Kounenis, and E. J. Kraft</i>	H277
Role of renal nerves in onset and maintenance of spontaneous hypertension <i>R. A. Norman, Jr. and D. J. Zielak</i>	H284
On-line calorimetry in the arterially perfused rabbit interventricular septum <i>J. E. Ponce-Hornos, N. V. Ricchiuti, and G. A. Langer</i>	H289
Muscular blood flow distribution patterns as a function of running speed in rats <i>M. H. Laughlin and R. B. Armstrong</i>	H296
Intra-arterial histamine increases blood-brain transport in rats <i>P. M. Gross, G. M. Teasdale, D. I. Graham, W. J. Angerson, and A. M. Harper</i>	H307
[K ⁺] _o accumulation and electrophysiological alterations during early myocardial ischemia <i>J. Weiss and K. I. Shine</i>	H318
Postnatal carbon monoxide exposure: immediate and lasting effects in the rat <i>D. G. Penney, M. S. Baylerian, J. E. Thill, C. M. Fanning, and S. Yedavally</i>	H328
Effect of myocardium at risk on outcome after coronary artery occlusion and release <i>M. Austin, T. L. Wenger, F. E. Harrell, Jr., F. A. Luzzi, and H. C. Strauss</i>	H340

SPECIAL COMMUNICATIONS

Impedance loading servo pump system for excised canine ventricle <i>K. Sunagawa, D. Burkhoff, K. O. Lim, and K. Sagawa</i>	H346
---	------

Quantitation of changes in lymph protein concentration during lymph node transit <i>T. H. Adair, D. S. Moffatt, A. W. Paulsen, and A. C. Guyton</i>	H351
Salt loading augments vascular responses to indomethacin in stroke-prone SHR <i>T. Imaizumi, A. Takeshita, T. Ashihara, and M. Nakamura</i>	H360
Concentrations of ionic and total calcium in plasma of four models of hypertension <i>G. L. Wright and G. O. Rankin</i>	H365
Relative error and variability in blood flow measurements with radiolabeled microspheres <i>W. P. Dole, D. L. Jackson, J. I. Rosenblatt, and W. L. Thompson</i>	H371
Epicardial deformation and left ventricular wall mechanics during ejection in the dog <i>T. Arts, P. C. Veenstra, and R. S. Reneman</i>	H379
Comparative force-velocity relation and analyses of myosin of dog atria and ventricles <i>J. Wikman-Coffelt, H. Refsum, G. Hollosi, L. Rouleau, L. Chuck, and W. W. Parmley</i>	H391
Elevated arteriolar adenosine 3',5'-cyclic monophosphate production by SHR <i>J. W. Dusseau and P. M. Hutchins</i>	H398
Relationship between placental blood flow and placental and fetal size in guinea pig <i>S. A. Myers, J. W. Sparks, E. L. Makowski, G. Meschia, and F. C. Battaglia</i>	H404
Regional coronary vasoconstriction in response to stimulation of stellate ganglia <i>L. E. Rinkema, J. X. Thomas, Jr., and W. C. Randall</i>	H410
Local cerebral circulatory and metabolic effects of indomethacin <i>J. McCulloch, P. A. T. Kelly, J. J. Grome, and J. D. Pickard</i>	H416
Accumulation of [³ H]norepinephrine in canine saphenous vein: influence of plasma <i>W. Freas, S. M. Muldoon, and F. J. Haddy</i>	H424
Acetylcholine inhibits positive inotropic effect of cholera toxin in ventricular muscle <i>A. J. Pappano, P. M. Hartigan, and M. D. Coutu</i>	H434
Responses of cerebral arterioles to increased venous pressure <i>E. P. Wei and H. A. Kontos</i>	H442
Ca ²⁺ -tolerant adult canine myocytes: preparation and response to anoxia/acidosis <i>A. M. Spanier and W. B. Weglicki</i>	H448
Vasodepressor action of angiotensin in conscious chickens <i>Y. Nakamura, H. Nishimura, and M. C. Khosla</i>	H456
Sympathetic nerve discharge in chronic spinal cat <i>J. L. Ardell, S. M. Barman, and G. L. Gebber</i>	H463
Thromboxane mediates acute pulmonary hypertension in sheep extracorporeal perfusion <i>M. B. Peterson, P. C. Huttemeier, W. M. Zapol, E. G. Martin, and W. D. Watkins</i>	H471
Effect of aminophylline on coronary functional hyperemia and myocardial adenosine <i>C. E. Jones, T. W. Hurst, and J. R. Randall</i>	H480

SPECIAL COMMUNICATIONS

A technique to inject microspheres into the left atrium of awake dogs without thoracotomy <i>H. R. Phillips, R. S. Stack, J. C. Rembert, and J. C. Greenfield, Jr.</i>	H488
---	------

RAPID COMMUNICATIONS

A comparison of capillary hydraulic conductivities in postural and locomotor muscle <i>P. F. McDonagh and R. W. Gore</i>	H491
---	------

ANNOUNCEMENTS

H498

Coherence of cardiac output with rate changes <i>J. Melbin, D. K. Detweiler, R. A. Riffle, and A. Noordergraaf</i>	H499
α -Naphthylthiourea produces dose-dependent lung vascular injury in sheep <i>A. M. Havill, M. H. Gee, J. D. Washburne, A. Premkumar, R. Ottaviano, J. T. Flynn, and J. A. Spath, Jr.</i>	H505
Nonischemic myocardial hypoxia: coronary dilation without increased tissue adenosine <i>H. F. Downey, G. J. Crystal, E. L. Bockman, and F. A. Bashour</i>	H512
Age-related effects of digoxin on myocardial contractility and Na-K pump in sheep <i>T. J. Hougen and W. F. Friedman</i>	H517
Effects of autonomic activity and changes in heart rate on atrioventricular conduction <i>D. W. Wallick, P. J. Martin, Y. Masuda, and M. N. Levy</i>	H523
Early changes in fiber profile and capillary density in long-term stimulated muscles <i>O. Hudlická, L. Dodd, E. M. Renkin, and S. D. Gray</i>	H528
Adenosine's role in coronary vasodilation induced by atrial pacing and norepinephrine <i>J. P. Manfredi and H. V. Sparks, Jr.</i>	H536
Comparison of carotid sinus baroreceptor sensitivity in newborn and adult rabbits <i>E. Tomomatsu and K. Nishi</i>	H546
Na^+ - K^+ exchanges in canine arterial and venous smooth muscle <i>J. G. De Mey and P. M. Vanhoutte</i>	H551
Systemic and regional hemodynamic effects of endogenous vasopressin stimulation in rats <i>F. Charocopoulos, P. Hatzinikolaou, W. G. North, and H. Gavras</i>	H560
Effect of sympathetic nerve stimulation and cardiac denervation on MBF during LAD occlusion <i>M. J. Barber, J. X. Thomas, Jr., S. B. Jones, and W. C. Randall</i>	H566
Effect of norepinephrine on lymph flow and edema formation in the canine forelimb <i>J. T. O'Neill, F. J. Haddy, and G. J. Grega</i>	H575
Effects of prostacyclin on hepatic vasculature and metabolism of renin in conscious dogs <i>S. F. Echtenkamp, J. O. Davis, R. H. Freeman, J. R. Dietz, and D. Villarreal</i>	H584
Phospholipid phosphorylation in erythrocyte of spontaneously hypertensive rats <i>S. Koutouzov, P. Marche, J.-F. Cloix, and P. Meyer</i>	H590
A study of rat intracerebral arterioles: methods, morphology, and reactivity <i>R. G. Dacey, Jr. and B. R. Duling</i>	H598
Inhibition of baroreflex bradycardia by aortic nerve excitatory afferents in dogs <i>T. E. Pisarri, G. L. Matson, and J. E. Kendrick</i>	H607
Effect of an anteroventral third ventricle lesion on NaCl hypertension in Dahl salt-sensitive rats <i>A. Goto, M. Ganguli, L. Tobian, M. A. Johnson, and J. Iwai</i>	H614
NAD/NADH: redox state changes on cat brain cortex during stimulation and hypercapnia <i>L. Gyulai, E. Dora, and A. G. B. Kovach</i>	H619
Adenosine and coronary blood flow in conscious dogs during normal physiological stimuli <i>A. N. Bacchus, S. W. Ely, R. M. Knabb, R. Rubio, and R. M. Berne</i>	H628

SPECIAL COMMUNICATIONS

A digital sonomicrometer for two-point length and velocity measurements <i>C. A. Goodman and F. S. Castellana</i>	H634
--	------

INVITED REVIEW

Factors modifying contraction-relaxation cycle in vascular smooth muscles <i>H. Kuriyama, Y. Ito, H. Suzuki, K. Kitamura, and T. Itoh</i>	H641
<hr/>	
Cardiac output distribution during vasopressin infusion or dehydration in conscious dogs <i>J. F. Liard, O. Dériaz, P. Schelling, and M. Thibonnier</i>	H663
Catecholamine effects on intracellular sodium activity and tension in dog heart <i>J. A. Wasserstrom, D. J. Schwartz, and H. A. Fozzard</i>	H670
Mechanisms of initial heart rate response to postural change <i>C. Borst, W. Wieling, J. F. M. van Brederode, A. Hond, L. G. de Rijk, and A. J. Dunning</i>	H676
Movement of necrotic wavefront after coronary artery occlusion in rabbit <i>C. Connelly, W. M. Vogel, Y. M. Hernandez, and C. S. Apstein</i>	H682
Metabolic and mechanical effects using L- and D-carnitine in working swine hearts <i>A. J. Liedtke, S. H. Nellis, L. F. Whitesell, and C. Q. Mahar</i>	H691
Myocardial blood flow and function with critical coronary stenosis in exercising dogs <i>K. P. Gallagher, G. Osakada, M. Matsuzaki, W. S. Kemper, and J. Ross, Jr.</i>	H698
Effect of serum and stirring on diffusive ^{125}I -albumin and Evans blue dye uptake <i>D. L. Fry, G. W. Melchior, and J. Mitschelen</i>	H708
Pentobarbital alters compensatory neural and humoral mechanisms in response to hemorrhage <i>M. Zimpfer, W. T. Manders, A. C. Barger, and S. F. Vatner</i>	H713
Effect of thyroxine treatment on exogenous myocardial lactate oxidation <i>M. Fintel and A. H. Burns</i>	H722
Regional myocardial blood flow and oxygen delivery in fetal, newborn, and adult sheep <i>D. J. Fisher, M. A. Heymann, and A. M. Rudolph</i>	H729
Metabolism of norepinephrine in vitro by dog pulmonary arterial endothelium <i>D. K. Rorie</i>	H732
Relationship of coronary flow and perfusion territory in dogs <i>K. W. Scheel, L. A. Ingram, and R. L. Gordey</i>	H738
Sympathoadrenal mechanisms in hemodynamic responses to gastric distension in cats <i>J. C. Longhurst and J. Ibarra</i>	H748
Atrioventricular nodal conduction during atrial fibrillation in rabbit heart <i>T. Mazgalev, L. S. Dreifus, J. Bianchi, and E. L. Michelson</i>	H754
Right and left ventricular oxygen metabolism in open-chest dogs <i>S. Kusachi, O. Nishiyama, K. Yasuhara, D. Saito, S. Haraoka, and H. Nagashima</i>	H761
Different forms of spontaneous discharge induced by strophanthidin in cardiac Purkinje fibers <i>S. Ishikawa and M. Vassalle</i>	H767
Fluid volumes and pressor responsiveness in two-kidney rabbits with renal artery stenosis <i>J. A. Johnson, K. D. Kurz, S. Siripaisarnpipat, D. W. Zeigler, and C. G. Payne</i>	H779
Tyrosine hydroxylase and choline acetyltransferase activities in ischemic canine heart <i>P. G. Schmid, B. J. Greif, D. D. Lund, and R. Roskoski, Jr.</i>	H788
A programmable pressure control system for coronary flow studies <i>J. M. Canty and R. E. Mates</i>	H796

Mechanisms for redistribution of plasma protein following acute protein depletion <i>G. C. Kramer, B. A. Harms, B. I. Bodai, R. H. Demling, and E. M. Renkin</i>	H803
Baroreflex regulation of renal nerve activity during volume expansion <i>M. D. Thames, B. D. Miller, and F. M. Abboud</i>	H810
Sensitization of vagal cardiopulmonary baroreflex by chronic digoxin <i>M. D. Thames, B. D. Miller, and F. M. Abboud</i>	H815
β -Adrenergic dilator effects in consecutive vascular sections of skeletal muscle <i>J. Lundvall, J. Hillman, and D. Gustafsson</i>	H819
Skeletal muscle and cardiac changes with training in patients with angina pectoris <i>R. J. Ferguson, A. W. Taylor, P. Côté, J. Charlebois, Y. Dinelle, F. Péronnet, J. De Champlain, and M. G. Bourassa</i>	H830

No. 6. DECEMBER 1982

Anesthetic depression of microcirculation, central hemodynamics, and respiration in decerebrate rats <i>J. E. Faber, P. D. Harris, and D. L. Wiegman</i>	H837
Microvascular sensitivity to PGE ₂ and PGI ₂ in skeletal muscle of decerebrate rat <i>J. E. Faber, P. D. Harris, and F. N. Miller</i>	H844
Contrasting ischemic contraction patterns by zone and layer in canine myocardium <i>S. Hattori, W. S. Weintraub, J. B. Agarwal, M. M. Bodenheimer, V. S. Banka, and R. H. Helfant</i>	H852
Morphometry of right ventricular hypertrophy induced by strenuous exercise in rat <i>P. Anversa, C. Beghi, V. Levicky, S. L. McDonald, and Y. Kikkawa</i>	H856
Prediction of myocardial O ₂ requirements by indirect indices <i>J. Vinten-Johansen, H. W. Duncan, J. G. Finkenbergh, M. C. Hume, J. M. Robertson, R. J. Barnard, and G. D. Buckberg</i>	H862
Renin-angiotensin and development of collateral circulation after renal ischemia <i>L. A. Fernandez, V. J. Caride, J. Twickler, and R. E. Galaray</i>	H869
Persistence of myocardial failure following removal of chronic volume overload <i>W. H. Newman, J. G. Webb, and P. J. Privitera</i>	H876
Estimation of rabbit myocardial metabolic rate for glucose using fluorodeoxyglucose <i>J. Krivokapich, S.-C. Huang, M. E. Phelps, J. R. Barrio, C. R. Watanabe, C. E. Selin, and K. I. Shine</i>	H884
Ouabain binding and potassium relaxation in aortas from renal hypertensive rabbits <i>E. C. Hagen, J. C. Johnson, and R. C. Webb</i>	H896
Modification of inflammatory response to aspiration with ibuprofen <i>T. Utsunomiya, M. M. Krausz, B. Dunham, C. R. Valeri, L. Levine, D. Shepro, and H. B. Hechtman</i>	H903
Feeding a creatine analogue delays ATP depletion and onset of rigor in ischemic heart <i>J. J. Roberts and J. B. Walker</i>	H911
Passive electrical properties of normal and hypertrophied rat myocardium <i>E. C. H. Keung, C.-S. Keung, and R. S. Aronson</i>	H917
Altered arterial ion transport and its reversal in aldosterone hypertensive rat <i>E. T. Garwitz and A. W. Jones</i>	H927
Effect of desmopressin-induced water retention on systemic hemodynamics in rat <i>P. A. Gross, V. L. Travis, L. Horwitz, R. W. Schrier, and R. J. Anderson</i>	H934
Use of tibial length to quantify cardiac hypertrophy: application in the aging rat <i>F. C. P. Yin, H. A. Spurgeon, K. Rakusan, M. L. Weisfeldt, and E. G. Lakatta</i>	H941
Arterial wall oxygen consumption rate varies spatially <i>D. G. Buerk and T. K. Goldstick</i>	H948

Fetal myocardial oxygen and carbohydrate metabolism in sustained hypoxemia in utero <i>D. J. Fisher, M. A. Heymann, and A. M. Rudolph</i>	H959
Effect of exercise in healthy men on QRS power spectrum <i>V. Bhargava and A. L. Goldberger</i>	H964
Response of vasopressin and norepinephrine to lower body negative pressure in humans <i>S. R. Goldsmith, G. S. Francis, A. W. Cowley, and J. N. Cohn</i>	H970
Peripheral vascular effects of nitroglycerin in a conscious rat model of heart failure <i>S. F. Flaim</i>	H974
Transthoracic defibrillation in 100-kg calves with sequentially applied pulses <i>J. H. Gold, J. C. Schuder, H. Stoeckle, W. C. McDaniel, D. W. Moellinger, and S. A. Roberts</i>	H982
Postextrasystolic potentiation and contractile reserve: requirements and restrictions <i>R. M. Lust, Jr., L. O. Lutherer, M. E. Gardner, and M. W. Cooper</i>	H990
Cardiovascular regulation in canines during low-frequency acceleration <i>C. F. Knapp, J. M. Evans, D. C. Randall, and J. A. Marquis</i>	H998
Hindlimb resistance in hypoxic dogs after adrenergic blockade or denervation <i>S. M. Cain and C. K. Chapler</i>	H1010

SPECIAL COMMUNICATIONS

Direct measurement of microvessel hematocrit, red cell flux, velocity, and transit time <i>I. H. Sarelius and B. R. Duling</i>	H1018
Myocardial pH during regional ischemia: evaluation of a fiber-optic photometric probe <i>G. A. Tait, R. B. Young, G. J. Wilson, D. J. Steward, and D. C. MacGregor</i>	H1027

ANNOUNCEMENTS

<i>Subject Index to Volume 12</i>	H1033
<i>Author Index to Volume 12</i>	H1043

CORRIGENDA

Volume 243, October 1982
Volume 12, October 1982

Page H619: Laszlo Gyulai, Eörs Dora, and Arisztid G. B. Kovach. "NAD/NADH: redox state changes on cat brain cortex during stimulation and hypercapnia." Authors' affiliation line should read: *Experimental Research Department and Second Institute of Physiology, Semmelweis Medical University, Budapest, Üllői ut 78/a, Hungary.* Address for reprint requests: L. Gyulai, Johnson Research Foundation, University of Pennsylvania, 37th and Hamilton Walk, Richards Bldg.—5th Floor, Philadelphia, PA 19104.

L

2

I

Information for Authors

AMERICAN JOURNALS OF PHYSIOLOGY AND JOURNAL OF APPLIED PHYSIOLOGY

The American Physiological Society publishes the following research journals: *American Journal of Physiology* (consolidated); *American Journal of Physiology: Cell Physiology*; *American Journal of Physiology: Endocrinology and Metabolism*; *American Journal of Physiology: Gastrointestinal and Liver Physiology*; *American Journal of Physiology: Heart and Circulatory Physiology*; *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology*; *American Journal of Physiology: Renal, Fluid and Electrolyte Physiology*; *Journal of Applied Physiology: Respiratory, Environmental and Exercise Physiology*; and the *Journal of Neurophysiology*.

Authors should select the specific journal that is most appropriate for their work and submit the manuscript to its Editor, American Physiological Society, 9650 Rockville Pike, Bethesda, MD 20814. (See the *Journal of Neurophysiology* for special instructions on the preparation of manuscripts for that journal.)

Manuscripts are refereed critically by two or more members of the Editorial Board or consultants. Acceptance of manuscripts is based on scientific content and presentation of the material. The Editor/Associate Editor selects the reviewers, corresponds with the author, and makes the final decision on the manuscript.

Submission of a paper requires the written assurance that it represents original material that has not been published other than as an abstract and is not under consideration for publication elsewhere. Further assurance is required that the manuscript will not be submitted for publication elsewhere until a decision has been made as to its acceptability for the *American Journals of Physiology* or the *Journal of Applied Physiology*, and authors are asked to submit a statement to this effect.

If the paper depends critically on another paper that is as yet unpublished, two copies of that paper should be included for the reviewers.

Membership in the Society is not a prerequisite for publication.

Style of Manuscript

Manuscripts should meet the requirements outlined below to avoid delay in review and publication.

General Instructions. 1) Manuscripts must be typewritten, double-spaced with wide margins on 8.5 x 11-inch bond paper. Three copies should be submitted—the original and two clear photocopies. Three sets of illustrations must be submitted. 2) Pages should be numbered in the upper right-hand corner (beginning with the first text page). They should be arranged in the following order: title page, abstract and index terms, text, text footnotes, acknowledgments, references, tables, figure legends, illustrations. 3) The title page should have the title of the article; author(s); department and institution in which the work

was done with city, state and zip code, or country; an abbreviated title for the running head (not exceeding 55 characters including spaces between words); name and address for mailing proofs; and a contact telephone number. 4) The abstract and index terms should be on a separate sheet, all lines double-spaced. 5) Text footnotes, acknowledgments, references, and figure legends should begin on separate sheets, all lines double-spaced. 6) Each table should be typed on a separate sheet and double-spaced. 7) Illustrations should be identified on the reverse (lightly with a soft pencil) with figure number and name of first author; when necessary, the top should be marked. 8) The text should be clear and concise, conforming to accepted standards of English style and usage. Unfamiliar or new terms should be defined when first used (see section on *Abbreviations, Symbols, and Terminology*). Jargon, clichés, and laboratory slang should not be used.

Title. The title, a widely circulated part of the article, should be informative. It should contain no unnecessary words like "Studies in . . .," and should not exceed 85 characters, including spaces between words.

Abstract. An informative one-paragraph abstract of not more than 170 words must accompany each manuscript. It should be suitable for use by abstracting journals without rewording and should state concisely what was done and why (including species and state of anesthesia), what was found (in terms of data, if possible), and what was concluded.

Index Terms. A list of three or more words or short phrases not included in the title should be appended to the abstract. Add species of animals studied if this information does not appear in the title.

Abbreviations, Symbols, and Terminology. Include in the manuscript a list of new or special abbreviations used in the paper, with spelled-out form or definition if necessary. For commonly accepted abbreviations, word usage, symbols, etc., authors are referred to the *CBE Style Manual* (4th ed., 1978). Chemical and biochemical terms and abbreviations should be in accordance with the recommendations of the IUPAC-IUB Combined Commission on Biochemical Nomenclature. Isotope specification should conform to the IUPAC system, with the mass number placed as a superscript preceding the chemical symbol, as ^{14}C , not C^{14} . Authors are referred to the following articles for style in specialized fields: "Glossary on respiration and gas exchange" (*J. Appl. Physiol.* 34: 549-558, 1973), "Glossary of terms for thermal physiology" (*J. Appl. Physiol.* 35: 941-961, 1973).

Spelling and Compounding. Authors should follow *Webster's Third New International Dictionary* for spelling, compounding, and word division.

Promissory Notes. The Journals' policy is against inclusion of either implicit or explicit promises that future work will be published.

Drugs, Chemicals, and Trade Names. Proprie-